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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/559,582

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EXAMINER

SCRUGGS, ROBERT J

ART UNIT	PAPER NUMBER
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3723

MAIL DATE	DELIVERY MODE
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10/01/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/559,582	Applicant(s) CHAUNDLER ET AL.	
	Examiner Robert Scruggs	Art Unit 3723	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 July 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) none is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 July 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

FINAL ACTION

1. This action is in response to the amendment received on July 23, 2007. Claims 1-12 remain pending in the application and have been fully examined.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-10 and 12 are **Finally** rejected under 35 U.S.C. 103(a) as being unpatentable over Pflager et al. (5443413) in view of Suzuki (previously cited).

In reference to claim 1, Pflager discloses an apparatus for grinding cams comprising, a spindle (5) (Figure 1) including a shaft that has a grinding wheel (18) mounted at one end, a rigid elongated casing (1) extending axially from drive means formed as an electric motor (40), the shaft being carried by two hydrostatic bearings (64 and 65), wherein one of the hydrostatic bearings (64) being formed at a location near said one end of the shaft so as to be at a remote end from the motor and depending upon the length of the workpiece selected by a user, the shaft and the casing could inherently extend to at least the length of the workpiece depending on the size of workpiece selected, but lacks, two hydrostatic bearings disposed on opposite sides of the motor. However, Suzuki discloses a spindle (1) Figure (1), which includes a motor (5) having hydrostatic bearings (9) formed at opposite ends thereof (see abstract). It would have

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been obvious to one of ordinary skill in the art at the time the invention was made to modify the motor housing, of Pflager, with hydrostatic bearings formed on opposite sides of the motor, in view of Suzuki, in order to provide a spindle that has an improved dynamic stiffness and a high rotation accuracy.

In reference to claim 2, Pflager shows that a bearing (65) can be placed at the inner end of the of the shaft, which is external to a motor housing that includes a stator (14) and a rotor (13) and Suzuki teaches that a third bearing could be placed within the motor housing at the other end of the shaft opposite to the inboard end.

In reference to claim 3, Pflager also discloses a stator (14) is secured within a rigid motor housing (2) and when Pflager is taken in view of Suzuki, they teach that all the bearings could be secured within the rigid elongated casing or the rigid motor housing.

In reference to claim 4, Pflager also shows that the external part of the shaft is longer than the axial length of the rotor member (see figure 1) therefore since Pflager in view of Suzuki disclose the same structure of the shaft as claimed by the applicant, the stiffness and the support of the shorter part of the shaft situated between the second and third bearings would dictate that the first bending resonant frequency of the longer external part is above the rotational frequency.

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In reference to claim 5, Pflager also shows a symmetrical design for the housing (2), which can be seen in figure 1.

In reference to claim 6, Pflager also discloses a water-cooling jacket (21) which forces water to follow a helical path around the motor.

In reference to claim 7, Suzuki also teaches of forming a spindle that is axisymmetrical which can be seen in figure 1.

In reference to claim 8, Pflager also discloses that oil is supplied to the bearing under pressure by a pump (28, 29), which draws oil from a reservoir (20).

In reference to claims 9 and 10, Pflager also discloses that a lower region (4) is formed as a collection box, which is used for draining heated oil.

In reference to claim 12, Pflager in view of Suzuki disclose the claimed invention, therefore since the method is inherently suggested by the structure, the device formed by the combination of Pflager and Suzuki would inherently be able to perform aligning of the bearings as claimed in claim 12.

4. Claim 11, is **Finally** rejected under 35 U.S.C. 103(a) as being unpatentable over Pflager et al. (5443413) in view of Suzuki (previously cited) and Lundin et al (5103701).

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Pflager discloses the claimed invention previously mentioned above, but lacks, a thermal barrier. However, Lundin et al. teaches of using a thermal barrier (22) for a machine tool (Column 3, Lines 52-63). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the lower region, of Pflager, with a thermal barrier, in view of Lundin et al. in order to prevent undesired transfer of heat.

Response to Arguments

5. Applicant's arguments filed July 23, 2007 have been fully considered but they are not persuasive.

6. Applicant contends that, **“Combination of the two cited references would not have been considered by a person of ordinary skill in this field without the benefit of hindsight, due to the prejudice against it described above.”**

a. The examiner respectfully disagrees with this statement. In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971). Since, it was known to provide hydrostatic bearings on opposite ends of a motor (as taught by Suzuki) and since Pflager et al. already disclosed

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the rest of the limitations, the combination between the two references would provide a advantageous spindle having improved dynamic stiffness and high rotation accuracy (see paragraphs 4 and 7-9 of Suzuki) therefore the combination need not be constructed from the applicant's disclosure and would not result in hindsight reasoning since the combination provides an advantageous spindle as described above therefore the examiner believes the rejection is proper and thus maintained.

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

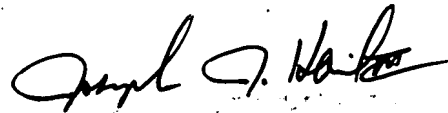
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert Scruggs whose telephone number is 571-272-8682. The examiner can normally be reached on Monday-Friday, 8:30-5:30.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Hail can be reached on 571-272-4485. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



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